

Sho-Rate™ "50" Model 1350E and Sho-Rate™ "150" Model 1355E

FEATURES AND BENEFITS

- Heavy-wall, precision bore, borosilicate glass metering tubes
- A wide range of scales on the metering tube with contrasting background for easy readability
- Tubes sealed on compression gasket by threaded seal spindle
- Tubes removable without disconnecting instrument
- Integral float stops prevent loss of float during tube removal
- Interchangeable tubes and floats

DESCRIPTION

The Sho-Rate 1350 and 1355 Series of low flow indicators provides a cost-effective means of flow indication for both 5% (Model 1355) and 10% (Model 1350) accuracy requirements. Available options include the Standard or NRS™ integral needle control valves, as well as flow controllers on the inlet or outlet.

SPECIFICATIONS

Capacities

1350 Series: Refer to Tables 1, or 2 and 3

1355 Series: Refer to Tables 2 and 3, or 4

Accuracy

1350 Series Standard: Accuracy of $\pm 10\%$ of full scale

1355 Series Standard: $\pm 5\%$ of full scale

Repeatability

0.5% full scale

Pressure Equipment Directive (97/23/EC)

Note: Equipment falls under Sound Engineering Practice (SEP) according to the directive.

Pressure/Temperature

200 psig at 33°F to 250°F (1°C to 121°C)

170 psig at 33°F to 250°F (1°C to 121°C)(CRN Certification)

Pressure Drop

Inquire at factory

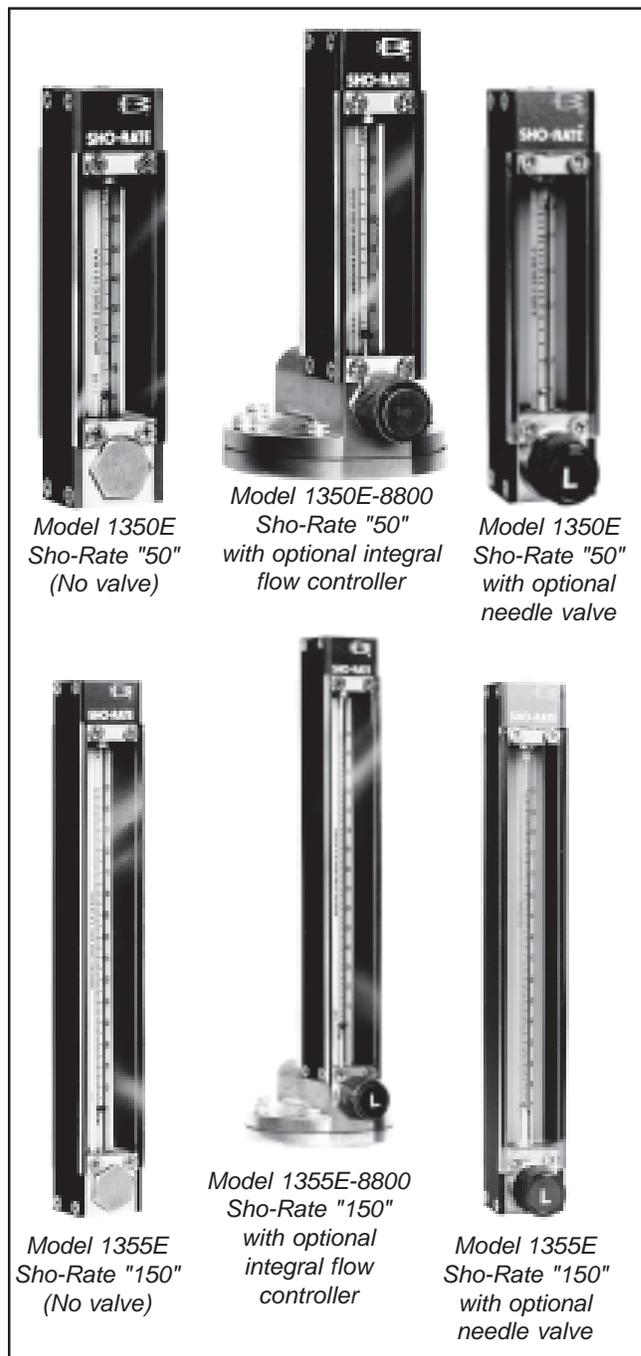
Flow Meter Assembly

Scales

1350 Series:

Length: 65 mm, nominal

Graduations: Standard: R-65mm, or R-100 linear reference scale with air or water calibration table.



Model 1350E
Sho-Rate "50"
(No valve)

Model 1350E-8800
Sho-Rate "50"
with optional integral
flow controller

Model 1350E
Sho-Rate "50"
with optional
needle valve

Model 1355E
Sho-Rate "150"
(No valve)

Model 1355E-8800
Sho-Rate "150"
with optional
integral flow
controller

Model 1355E
Sho-Rate "150"
with optional
needle valve

Ordering Information (Refer to Table 5)

1. Model
2. Size, connections, type
3. Quantity required
4. Fluid
5. Minimum, normal and maximum operating temperature
6. Minimum, normal and maximum operating pressure (inlet and outlet)
7. Minimum, normal and maximum flow rate
8. Materials of construction
 - a. End fittings
 - b. Side plates
 - c. Bezel
 - d. Elastomers
9. Fluid
10. Fluid specific gravity
11. Fluid viscosity
12. Unusual system conditions (For ranges and pressure drops other than those listed, consult factory).
13. Optional equipment
 - a. Valve type and location
 - b. Flow controller and type

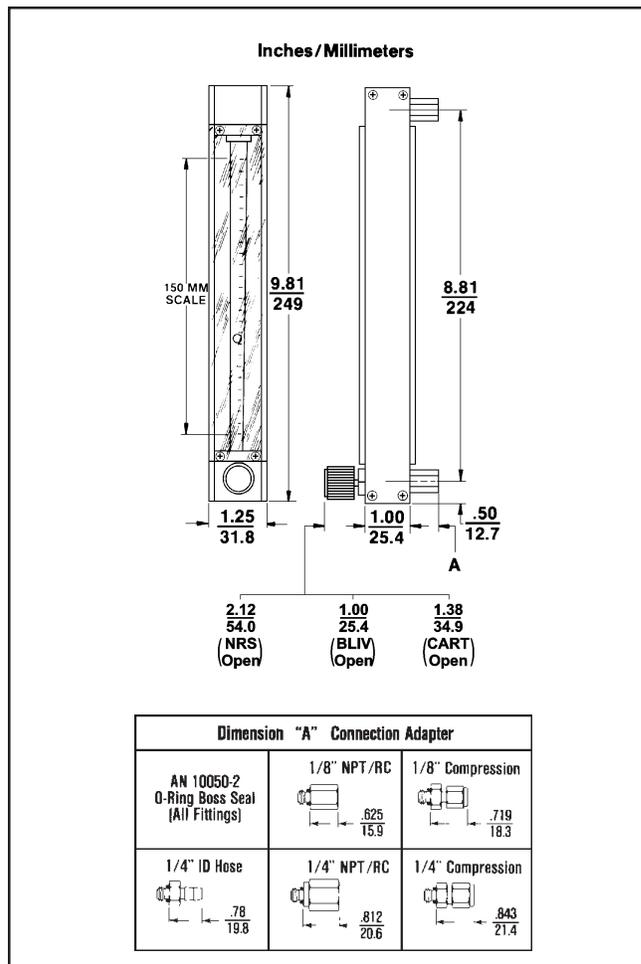


Figure 2 Dimensions - Sho-Rate 1355E



Figure 3 Optional Equipment

Models 1350E and 1355E

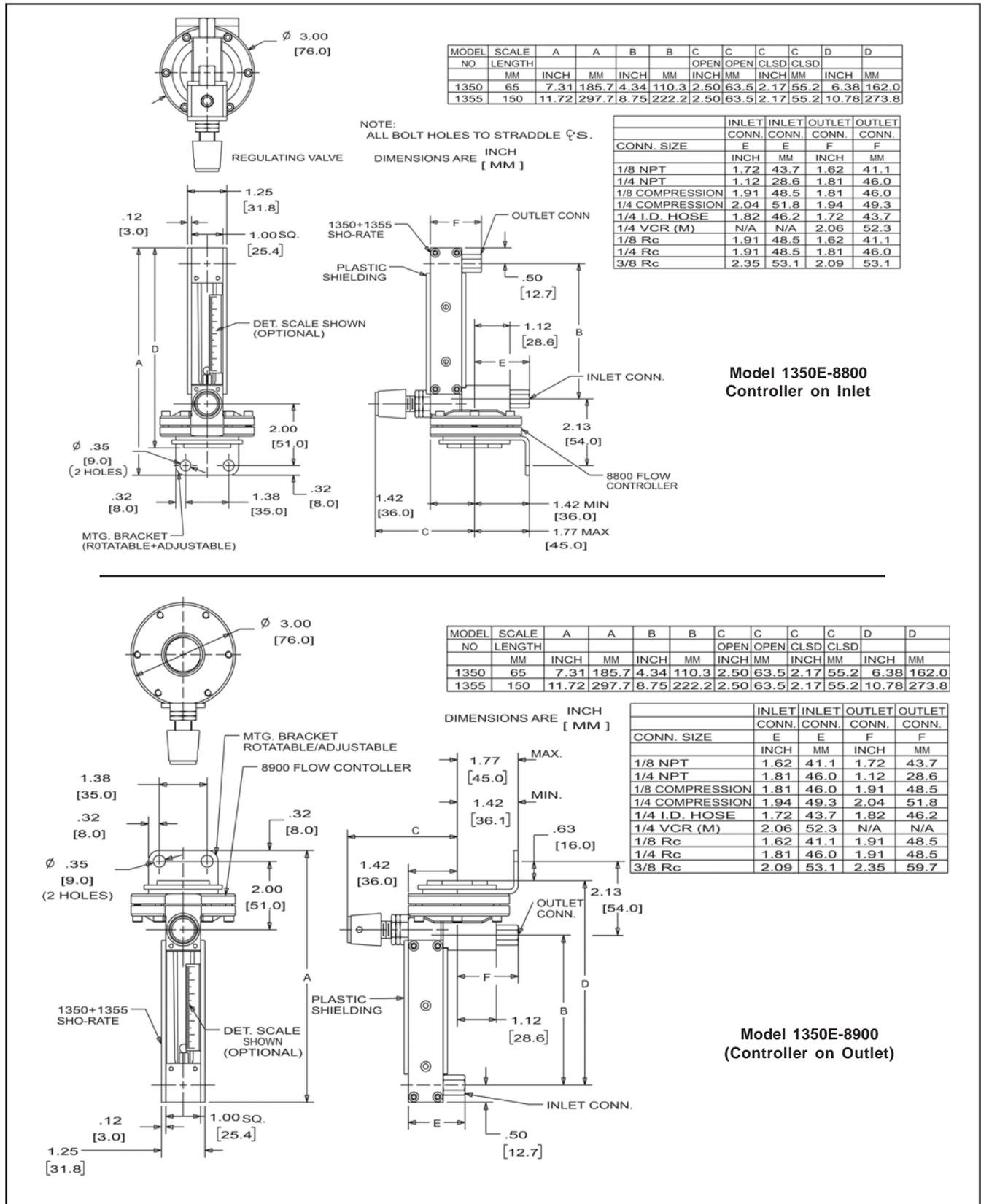


Figure 4 Dimensions - Sho-Rate 1350E & 1355E with Integral Flow Controller

Table 1 Capacities for Sho-Rate Model 1350E Rib Guided Tubes, Spherical Floats

METER SIZE	TUBE NO.	FLOAT MATERIAL	RIBBED TUBES, SPHERICAL FLOATS							
			WATER				AIR*			
			GPH	CODE	LPH	CODE	SCFH	CODE	NLPH	CODE
2	R-2-65-A	GLASS	0.011	JB6	0.042	JB9	0.13	JB7	3.4	JB8
		SAPPHIRE	0.022	JC4	0.085	JC2	0.18	JC3	5.0	JC1
		STN. STL.	0.046	JC8	0.18	JC5	0.34	JC7	9.0	JC6
		CARBOLOY	0.10	JB4	0.38	JB5	0.65	JB2	17.0	JB3
		TANTALUM	0.11	JD2	0.42	JC9	0.70	JD1	19.0	JD3
	R-2-65-B	GLASS	0.013	KB8	0.048	KB2	0.15	KB7	4.0	KB9
		SAPPHIRE	0.026	KC1	0.10	KD3	0.22	KC2	5.5	KC3
		STN. STL.	0.06	KC5	0.22	KC6	0.42	KC7	11.0	KC8
		CARBOLOY	0.12	KB4	0.48	KB5	0.80	KB3	22.0	KB6
		TANTALUM	0.13	KD2	0.50	KD5	0.85	KD4	22.0	KD1
	R-2-65-C	GLASS	0.11	LB9	0.42	LB7	0.95	LB6	24.0	LB8
		SAPPHIRE	0.15	LC1	0.6	LC2	1.3	LC3	34.0	LC4
		STN. STL.	0.38	LC7	1.4	LC8	2.0	LC9	50.0	LC6
		CARBOLOY	0.65	LB3	2.4	LB2	3.0	LB4	80.0	LB5
		TANTALUM	0.65	LD1	2.6	LD2	3.2	LD3	85.0	LD4
	R-2-65-D	GLASS	0.65	MB9	2.4	MB7	3.8	MB8	100	MC1
		SAPPHIRE	0.95	MC2	3.6	MC3	5.0	MC4	130	MC5
		STN. STL.	1.60	MC7	6.0	MD1	7.5	MC6	200	MC8
		CARBOLOY	2.40	MB5	9.0	MB2	11.0	MB3	280	MB4
		TANTALUM	2.60	MD5	10.0	MD6	12.0	MD2	300	MD4
6	R-6-65-A	GLASS	2.40	NB8	8.5	NB7	13.0	NC1	340	NB9
		SAPPHIRE	3.40	NC4	13.0	NC3	17.0	NC6	460	NC5
		STN. STL.	5.50	ND1	20.0	ND3	26.0	NC9	650	ND2
		CARBOLOY	8.50	NB2	32.0	NB3	36.0	NB5	950	NB6
		TANTALUM	9.0	ND6	34.0	ND5	38.0	ND7	1000	ND4
	R-6-65-B	GLASS	8.0	PB9	30.0	PB8	44.0	PC1	1100	PB7
		SAPPHIRE	12.0	PC5	44.0	PC3	60.0	PC4	1500	PC2
		STN. STL.	19.0	PD1	70.0	PC9	85.0	PC8	2200	PC6
		CARBOLOY	28.0	PB3	100	PB2	130	PB6	3400	PB4
		TANTALUM	30.0	PD7	110	PD6	140	PD5	3600	PD4

* FLOW RATES GIVEN ARE MAXIMUM VALUES. AIR FLOWS ARE AT 14.7 PSIA AND 70 DEGREES F.

TRADEMARKS
Brooks Brooks Instrument, LLC
Carboloy General Electric Co.
Kalrez DuPont Performance Elastomers
NRS Brooks Instrument, LLC
Sho-Rate Brooks Instrument, LLC
Teflon E.I. DuPont de Nemours & Co.
Viton-A DuPont Performance Elastomers

Models 1350E and 1355E

Table 2 Tube and Float Code,
Detachable Scale Option, 1st Digit

FIRST DIGIT FOR DETACHABLE SCALE CONFIGURATION		
CODE	MODEL 1350 TUBE	MODEL 1355 TUBE
A		R-2-15-A
B		R-2-15-AA
C		
D		R-2-15-B
E		R-2-15-C
F		R-2-15-D
G		R-6-15-A
H		R-6-15-B
J	R-2-65-A	R-2-15-AAAA
K	R-2-65-B	
L	R-2-65-C	
M	R-2-65-D	
N	R-6-65-A	
P	R-6-65-B	
Y	NO TUBE	NO TUBE

Table 3 Tube and Float Code,
Detachable Scale Option, 2nd & 3rd Digits

SECOND AND THIRD DIGITS FOR DETACHABLE SCALE CONFIGURATION			
METER ACCURACY	FLOAT MATERIAL	DETACHABLE SCALE INSCRIPTION	
		SPECIAL SINGLE SCALE	SPECIAL DUAL SCALE
STANDARD (1350-10%) (1355- 5%)	GLASS	2A	2N
	STN. STL.	2B	2P
	SAPPHIRE	2C	2Q
	CARBOLOY	2D	2R
	TANTALUM	2E	2S
CALIBRATED (1350-5%) (1355-2%)	GLASS	2G	2U
	STN. STL.	2H	2V
	SAPPHIRE	2J	2W
	CARBOLOY	2K	2X
	TANTALUM	2L	2Y

Table 4 Capacities for Sho-Rate Model 1355E Rib Guided Tubes, Spherical Floats

CAPACITIES (RIB GUIDE TUBES, SPHERICAL FLOATS) - FOR USE WITH 1355 SERIES ONLY						
METER SIZE	TUBE NO.	FLOAT MATERIAL	MAXIMUM FLOW RATE *		MODEL CODE - SCALE ON TUBE	
			WATER (CC/MIN.)	AIR	0-150 MM	0-100 LINEAR
2	R-2-15-AAAA	GLASS	0.59	50 SCC/M	JA6	JA1
		SAPPHIRE	1.1	79 SCC/M	JA8	JA3
		STN. STL.	2.6	150 SCC/M	JA7	JA2
		CARBOLOY	5.2	280 SCC/M	JA9	JA4
		TANTALUM	5.8	310 SCC/M	JB1	JA5
	R-2-15-AA	GLASS	1.11	88 SCC/M	BA6	BA1
		SAPPHIRE	2.15	136 SCC/M	BA8	BA3
		STN. STL.	4.93	258 SCC/M	BA7	BA2
		CARBOLOY	9.33	439 SCC/M	BA9	BA4
		TANTALUM	10.4	478 SCC/M	BB1	BA5
	R-2-15-D	GLASS	5.75	380 SCC/M	FA6	FA1
		SAPPHIRE	10.5	518 SCC/M	FA8	FA3
		STN. STL.	20.6	832 SCC/M	FA7	FA2
		CARBOLOY	33.2	1240 SCC/M	FA9	FA4
		TANTALUM	35.9	1320 SCC/M	FB1	FA5
	R-2-15-A	GLASS	16.6	.83 SLPM	AA6	AA1
		SAPPHIRE	26.3	1.1 SLPM	AA8	AA3
		STN. STL.	46.2	1.69 SLPM	AA7	AA2
		CARBOLOY	70.8	2.44 SLPM	AA9	AA4
		TANTALUM	75.9	2.6 SLPM	AB1	AA5
R-2-15-B	GLASS	52.8	2.37 SLPM	DA6	DA1	
	SAPPHIRE	79.7	3.08 SLPM	DA8	DA3	
	STN. STL.	133	4.7 SLPM	DA7	DA2	
	CARBOLOY	199	6.7 SLPM	DA9	DA4	
	TANTALUM	212	7.1 SLPM	DB1	DA5	
R-2-15-C	GLASS	84.6	3.9 SLPM	EA6	EA1	
	SAPPHIRE	129	5.1 SLPM	EA8	EA3	
	STN. STL.	218	7.6 SLPM	EA7	EA2	
	CARBOLOY	326	10.6 SLPM	EA9	EA4	
	TANTALUM	349	11.3 SLPM	EB1	EA5	
6	R-6-15-A	GLASS	200	8.7 SLPM	GA6	GA1
		SAPPHIRE	297	11.2 SLPM	GA8	GA3
		STN. STL.	493	16.6 SLPM	GA7	GA2
		CARBOLOY	726	23.2 SLPM	GA9	GA4
		TANTALUM	772	24.6 SLPM	GB1	GA5
	R-6-15-B	GLASS	573	23.9 SLPM	HA6	HA1
		SAPPHIRE	851	30.2 SLPM	HA8	HA3
		STN. STL.	1350	43.8 SLPM	HA7	HA2
		CARBOLOY	1950	61.2 SLPM	HA9	HA4
		TANTALUM	2060	64.7 SLPM	HB1	HA5

NOTE: ALL AIR FLOWS ARE AT 14.7 PSIA AND 70 DEGREES F.

*FLOW RATES SHOWN ARE MAXIMUM CAPACITIES. DIRECT READ SCALES MAY END AT SLIGHTLY DIFFERENT MAXIMUM FLOWS.

Table 5 Ordering Information and Model Code

MODEL	PURGE FLOWMETER		
1350E	65 MM TUBE, SIZES 2-6		
1355E	150 MM TUBE, SIZES 2-6		
	CODE	TUBE, SCALE AND FLOAT	
	—	MODEL 1350 OR 1355 DETACHABLE SCALE - SEE TABLES 2 & 3	
	—	MODEL 1350 - SEE TABLE 1	
	—	MODEL 1355 - SEE TABLE 4	
	CODE	TUBE PACKING	O-RING MATERIAL (METER/VALVE ASSEMBLY)
	A	BUNA -N	BUNA-N (STD FOR ALUMINUM AND BRASS METERS)
	B	VITON	BUNA-N
	C	VITON	VITON (STD FOR STN. STL. METERS)
	D	VITON	TEFLON/KALREZ (KALREZ O-RINGS IN VALVE OR CONTROLLER)
	E	VITON	EPM
	F	VITON	KALREZ
	G	TEFLON	BUNA-N
	H	TEFLON	VITON
	J	TEFLON	TEFLON/KALREZ (KALREZ O-RINGS IN VALVE OR CONTROLLER)
	K	TEFLON	EPM
	L	TEFLON	KALREZ
	M	EPM	EPM
	N	BUTYL	BUTYL
	P	NO PACKING	BUNA-N
	Q	NO PACKING	VITON
	R	NO PACKING	TEFLON/KALREZ (KALREZ O-RINGS IN VALVE OR CONTROLLER)
	S	NO PACKING	EPM
	T	NO PACKING	KALREZ
	U	NO PACKING	BUTYL
	CODE	FITTING AND ADAPTER MATERIAL/PROCESS CONNECTION SIZE AND TYPE	
	A	BRASS/ 1/8" NPT	
	D	BRASS/ THD 1/8" NPT WITH LOCKNUTS (STANDARD)	
	G	BRASS/ 1/4" NPT (STD WITH FLOW CONTROLLER)	
	L	BRASS/ THD 1/4" NPT WITH LOCKNUTS	
	P	BRASS/ 1/8" COMPRESSION	
	S	BRASS/ THD 1/8" COMPRESSION WITH LOCKNUTS	
	V	BRASS/ 1/4" COMPRESSION	
	Y	BRASS/ THD 1/4" COMPRESSION WITH LOCKNUTS	
	2	BRASS/ 1/4" I.D. HOSE	
	5	BRASS/ NO ADAPTOR-INTEGRAL 5/16-24 THD	
	E	ALUMINUM/ THD 1/8" NPT WITH LOCKNUTS (STANDARD)	
	H	ALUMINUM/ 1/4" NPT (STD WITH FLOW CONTROLLER)	
	6	ALUMINUM/ NO ADAPTOR-INTEGRAL 5/16-24 THD	
	C	316 STAINLESS STEEL/ 1/8" NPT	
	F	316 STAINLESS STEEL/ THD 1/8" NPT WITH LOCKNUTS (STANDARD)	
	J	316 STAINLESS STEEL/ 1/4" NPT (STD WITH FLOW CONTROLLER)	
	N	316 STAINLESS STEEL/ THD 1/4" NPT WITH LOCKNUTS	
	R	316 STAINLESS STEEL/ 1/8" COMPRESSION	
	U	316 STAINLESS STEEL/ THD 1/8" COMPRESSION WITH LOCKNUTS	
	X	316 STAINLESS STEEL/ 1/4" COMPRESSION	
	1	316 STAINLESS STEEL/ THD 1/4" COMPRESSION WITH LOCKNUTS	
	4	316 STAINLESS STEEL/ 1/4" I.D. HOSE	
	7	316 STAINLESS STEEL/ NO ADAPTER INTEGRAL 5/16-24 THD	
	8	316 STAINLESS STEEL/ 1/4" VCR	
	T	316 STAINLESS STEEL/ THD 1/8" Rc WITH LOCKNUTS	
	W	316 STAINLESS STEEL/ THD 1/4" Rc WITH LOCKNUTS	
	3	316 STAINLESS STEEL/ THD 3/8" Rc WITH LOCKNUTS	

1350E LC7 C E A 1 A TYPICAL MODEL CODE

